

- 1 Two circles, C_1 and C_2 , are drawn on a centimetre grid, with a scale of 1 cm for 1 unit on each axis.

The centre of circle C_1 is at the point with coordinates $(-1, 3)$ and the radius of C_1 is 13 cm.

The centre of circle C_2 is at the point with coordinates $(7, 18)$ and the radius of C_2 is 6 cm.

- (a) Work out the distance between the centre of C_1 and the centre of C_2

$$(18-3)^2 + (7-(-1))^2 = 289 \quad (1)$$

$$\text{distance} : \sqrt{289} \quad (1)$$

$$= 17 \quad (1)$$

17

..... cm
(3)

- (b) Explain why circle C_1 intersects circle C_2

Total radii = 19 cm . Distance = 17 cm . They overlap by 2 cm . (1)

(1)

(Total for Question 1 is 4 marks)